R.W.

(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07166465 A**

(43) Date of publication of application: **27.06.95**

(51) Int. Cl **D06M 11/38**
B41M 5/40
D03D 1/00
D06C 15/00
D06C 29/00
// D06M101:32

(21) Application number: **05236665**

(22) Date of filing: **22.09.93**

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(54) **RECORDING CLOTH**

(57) Abstract:

PURPOSE: To obtain fabric having excellent clearness of printed picture image and secured fastness to wear, etc.

CONSTITUTION: This recording fabric is a recording material useful by melt type heat transfer printing method, ink jet printing method, impact printing method or electrophotographic printing method and comprises fabric which is composed of yarn having fine pores or a great number of uneven parts mainly on the surface of the yarn and has 0.1-20$_{\mu}$m average roughness of center line as surface roughness on at least one side of the fabric.

* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] The textile for record to which it is the record object used for a melting type hot printing print method, an ink-jet print method, an impact print method, or an electrophotography method print method, and surface roughness of at least one side of the textile which it comes to consist of fiber which has the irregularity of a micropore or a large number mainly on a fiber front face is characterized by being 0.1-20 micrometers in center line average coarseness.
[Claim 2] The specific surface area of fiber is 1 m2 / g. Textile for record according to claim 1 characterized by being above.
[Claim 3] The claim 1 to which the effective-area product of the hole more than the moiety of the micropores of fiber is characterized by being 0.001 - 50 square mum, or the textile for record given in two.
[Claim 4] The claim 1 characterized by being the textile to which the void content of the micropore of fiber mainly changes from the fiber which has 5 - 70% of fine porosity which continued substantially, or the textile for record given in three.
[Claim 5] The claim 1 to which fiber is characterized by being mainly super-thin fiber with a single fiber fineness of 0.0001-1 denier, or the textile for record given in four.
[Claim 6] The claim 1 to which fiber is characterized by being mainly a polyester system, or the textile for record given in five.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] this invention relates mainly to the textile as a record object to a printer.
[0002] It is related more with a detail at the textile as a record object corresponding to various printers, such as a melting type heat transfer printer, an ink jet printer, an impact printer, and an electrophotography method printer.
[0003]
[Description of the Prior Art] Conventionally, record objects, such as a melting type heat transfer printer, an ink jet printer, an impact printer, and an electrophotography method printer, are paper or a film, and there was no textile. since the surface smooth nature of a textile looked it like [paper or a film] markedly and it was inferior to them in it, it was because the surface characteristic of the fiber for holding various ink is unsuitable therefore, coating a textile with polyurethane etc. and corresponding by name called a textile with it came out at most Of course, this coating textile was the last thing which would be recognized to be a textile with the usual feeling.
[0004]
[Problem(s) to be Solved by the Invention] In this invention, in view of this trouble, even if who sees, the state which can be easily recognized to be a textile, i.e., coating etc., is a textile in the state where it does not give, and the textile which can moreover be suitably used as record objects, such as a melting type heat transfer printer, an ink jet printer, an impact printer, and an electrophotography method printer, i.e., the printed picture, is excellent in sharp nature, and it uses as an offer plug the textile to which the robustness over friction etc. be
[0005]
[Means for Solving the Problem] the result wholeheartedly examined to the above-mentioned purpose by this invention -- the following main point -- solution -- it is going to plan -- it is a thing
[0006] That is, the textile for record of this invention is a record object used for a melting type hot printing print method, an ink-jet print method, an impact print method, or an electrophotography method print method, and surface roughness of at least one side of the textile which it comes to consist of fiber which has the irregularity of a micropore or a large number mainly on a fiber front face is characterized by being 0.1-20 micrometers in center line average coarseness.
[0007]
[Function] Hereafter, this invention is explained still in detail.
[0008] A textile is remarkably inferior to surface smooth nature compared with paper, a film, etc. Therefore, there is a trouble of not being practical, as a record object over various printers, such as a melting type heat transfer printer, an ink jet printer, an impact printer, and an electrophotography method printer.
[0009] In the usual textile, since a fiber front face was a flat substantially, even if riding of the various ink used for a melting type heat transfer printer, an ink jet printer, an impact printer, an electrophotography method printer, etc. was bad and gave the above-mentioned surface smooth nature to the textile, the fastness to crocking of the picture after the print to the textile was not good.
[0010] Then, this invention person inquired wholeheartedly, has improved them greatly, examined the textile suitably used as a textile for record, and reached this invention.
[0011] The textile consists of fiber which has the irregularity of a micropore or a large number

mainly on a fiber front face first, and its bird clapper is desirable. The ink of various printers has the fluidity, just before being fixed to a record object. If a micropore and irregularity exist in a fiber front face at this time, it will flow in there. Then, if temperature becomes low, or it gets dry and the fluidity of ink is lost, in an anchor effect, the various ink of various printers will become is easy to be held.

[0012] In addition, with the ink said by this invention, it used for convenience as general term. In the case of a melting type heat transfer printer, the ink said by this invention mainly consists of a pigment, a wax and a resin, and a pigment in fact, and in the case of an ink jet printer, it is mainly the dispersion-liquid object of a pigment, and, in the case of an impact printer, mainly consists of a pigment and a resin.

[0013] Next, when it looks at a textile still more macroscopically, it is desirable that surface roughness is 0.1-20 micrometers in center line average coarseness. More preferably, it is 0.1-10 micrometers and is 0.1-5 micrometers still more preferably. Neither an ink jet printer nor an impact printer nor an electrophotography method printer requires the severe surface sex as a melting type heat transfer printer. However, for the picture reservation which did not say that the front face it was ruined however was sufficient, but was excellent in sharp nature, the upper limit grade of the above-mentioned surface roughness is required.

[0014] In addition, the specific surface area of fiber is 1 m2 / g. It is desirable in it being above. In this case, they are 2 m2 / g. It is more desirable in it being above, and they are 3 m2 / g. It is still more desirable in it being above. In addition, the specific surface area said by this invention means the surface area which per [which has a micropore or irregularity] 1g of fiber has, and it can measure by the so-called BET (Bunauer-Emmet-Teller) method.

[0015] Moreover, that it is also 0.001 - 50 square mum has the desirable effective-area product of the hole more than the half of the micropores of fiber. In this case, it is more desirable that it is 0.01 - 30 square mum, and it is still more desirable to it that it is 0.01 - 10 square mum.

[0016] Moreover, having 5 - 70% of fine porosity which continued substantially also has the desirable void content of the micropore of fiber. In this case, it is more desirable to have 10 - 65% of fine porosity which continued substantially, and it is still more desirable to it to have 20 - 60% of fine porosity which continued substantially. In addition, with the void content said by this invention, it asks by the following formula.

[0017]

Unit [of the inside of void content (%) = (1-apparent density) / true-density x100 formula, apparent density, and true density] = (g/cm3)

Although especially composition, fiber fineness, etc. of such fiber are not limited, since the super-thin fiber whose single fiber fineness is mainly 0.0001-1 denier can offer quality of image with more high sharp nature, it is used preferably.

[0018] In addition, although the textile said by this invention points out the textiles which consist of synthetic fibers, such as natural fibers, such as silk and cotton, a polyester system, a polyamide system, a polyacrylonitrile system, and an urethane system, the regenerated fiber of a cellulose system or a protein system, a semi-synthetic fiber, etc., knitting, a nonwoven fabric, etc., it points out what can produce the fiber of the above-mentioned property by a certain processing method. Therefore, synthetic fibers which are synthetic fibers and which make a polyethylene terephthalate fiber an example, such as a polyester fiber and a polyamide fiber, are preferably used for this invention.

[0019] Although the methods of producing the textile which consists of the above-mentioned fiber and it may be any methods but should just use the technique from the former, if only an example is given, they can be attained by the causticizing method. Moreover, a high-pressure heat press can attain grant of the surface smooth nature to a textile. It is also desirable to perform high-pressure stream processing before a high-pressure heat press.

[0020] In this invention, it does not limit at all about coloring agent composition of the ink of various printers, a toner, etc. For example, you may be carbon black well used as a black coloring agent from the former, and may be the other pigment. Moreover, it is desirable not only a pigment such but when a color is a main coloring agent. For example, if a color which is dyed only by heating to it is taught to a melting type hot printing ribbon by making fiber into a polyester fiber and the textile is

heated after a hot printing print, since it will be dyed, it is desirable. And since the specific surface area of the textile which consists of fiber of this invention in that case is large, it has the feature that dyeing speed is quick. Such a method can also apply the ink for impact printers by teaching a color similarly to those ink and toners with the ink for ink-jet record, or the toner for electrophotography method printers.

[0021]

[Example] Hereafter, an example explains this invention still in detail. In addition, neither the effectiveness of this invention nor the range of a right is limited by this, or does not receive a limit.

[0022] PET with which example 1 alkyl sulfonic-acid sodium salt was made to blend 5% of the weight was made into the island, 5-sodium sulfoisophtharate copolymerized polyester was used for the sea, and both the macromolecules array object fiber (50-denier -10 filament) of 36 islands was obtained. After an appropriate time, weaving was carried out to 140 fablic density [/inch] x110 [/inch] high-density taffeta. Subsequently, after performing acid pretreatment, while carrying out dissolution removal and making a sea component super-thin with an alkali solution, the fiber front face was made to split-face-ize. Subsequently, after performing water jet punch processing to this textile, calender processing was performed and the textile smooth [a front face] and precise was obtained. It backed with thicker polyester film to this textile, and printed by filling up a commercial melting type heat transfer printer.

[0023] Consequently, the very clear picture was recorded. As a result of performing operation same about the polyester textile which consists of fiber with a conventional single fiber fineness of 3 deniers as comparison, only the picture which became blurred very much was acquired. On the other hand, the picture it can still be satisfied [with the case of the super-thin fiber which has not formed the same fineness into a surface split face] of the picture although it was better than the 3-denier fiber textile a little was not acquired.

[0024] The ribbon for melting type heat transfer printers in example 2 example 1 was transposed to the thing containing the high robustness color for polyester (C. I.Disperse Blue 330 equivalent), and same operation was performed.

[0025] Furthermore, in addition, when the picture carried out press heating at 180 degrees C at the print textile, it was able to dye deeply enough in only 10 seconds.

[0026] This dyeing textile was very excellent in robustness to friction, wash, etc.

[0027]

[Effect of the Invention] As mentioned above, by this invention, cannot give coating etc., it can be carried out, and the textile which can be suitably used as record objects, such as a melting type heat transfer printer, an ink jet printer, an impact printer, and an electrophotography method printer, can be offered.

[Translation done.]